U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES Permittee:	Kathy and Emanuel Correia
Facility:	Correia Dairy 1537 Pepper Road Petaluma, CA 94952 (Conditional Waiver of Waste Discharge Requirements Order R1-2012-0003; ID 1B11133DSON)
Receiving Water:	Unnamed Creek, tributary to Stemple Creek
Date of Inspection:	April 16, 2014
Inspection Participants:	
U.S. EPA:	Glenn Sakamoto, CWA Compliance Office, (415) 972 - 3556 Becky Mitschele, NPDES Office, (415) 972 - 3492
California Regional Board:	Cherie Blatt, North Coast Regional Water Quality Control Board (707) 576 – 2755 Rebecca Fitzgerald, North Coast Regional Water Quality Control Board (707) 576 – 2650
Western United Dairymen:	Melissa Lema, Field Representative
University of CA (Davis):	Deanne Meyers, Livestock Waste Management Specialist,
Report Prepared By:	Becky Mitschele, US EPA Region 9
Report Date:	May 13, 2014

1.0 SUMMARY

The California North Coast Region contains approximately 150 dairies, housing about 50,000 cows. While the size of the dairies in Marin and Sonoma are small compared to those in Chino and the Central Valley, they are often located on hills that slope toward creeks and streams. These water bodies are vulnerable to manure runoff, especially during the rainy season.

The United States Environmental Protection Agency (EPA) and the California North Coast Regional Water Quality Control Board (RB 1) performed an inspection of Correia Dairy to determine compliance with the conditional waiver of the RB1 Waste Discharge Requirements (order number R1-2012-0003) and to ensure that the operation did not have any unauthorized discharges. RB 1 is conducting inspections of all facilities seeking coverage under the conditional waiver permit. At the time of the inspection, the RB 1 had inspected over 100 out of the 120 dairy operations in the Regional Board.

EPA and RB 1 have not inspected this facility previously, and therefore, no past regulatory history exists. The weather at the time of the inspection, on April 16, 2014 (1:30 p.m.), was clear and dry. EPA and RB 1 observed no discharges or evidence of past discharges.

2.0 NORTH COAST PERMIT PROGRAM (RB 1)

The State Water Resources Control Board's 2004 Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires that nonpoint source discharges of waste be regulated by waste discharge requirements (WDRs), waiver of WDRs, or prohibitions to ensure compliance with Regional Water Board Water Quality Control Plans. As such, RB1 adopted dairy and concentrated animal feeding operation (CAFO) permits on January 19, 2012. The RB1 permitting program consists of a federal national discharge elimination system (NPDES) permit, a state WDR permit, and a conditional waiver of WDR permit. All operators of dairy facilities were required to enroll under one of the three "permits" by April 30, 2012.

The conditional waiver of WDR is a general "permit" and is applicable to existing dairy operations that have not expanded (as of 1/19/12). RB 1 requires new or expanding dairies to apply for an individual WDR or individual waiver of WDR permit.

The conditional wavier of WDR permit prohibits discharges to surface water and groundwater, requires specific production and land application best management practices, and establishes record keeping and monitoring requirements. Specifically, the waiver permit prohibits:

- Direct discharges to groundwater;
- Discharges of manure and process wastewater to surface water or groundwater;
- Discharges from the production area of stormwater that has come into contact with manure or process wastewater;
- Discharges to surface waters via tile drain lines or irrigation return flows (i.e. tailwater), including irrigation water that comes into contact with process wastewater or manure;

- Discharges from the land application that do not comply with the requirements in the water quality plan (or nutrient management plan for Large CAFOs) and the monitoring and reporting plan;
- Disposal of mortalities in liquid manure or process wastewater systems; and
- Animal access (i.e. direct contact) to surface water within production area.

The waiver permit requires facilities that meet EPA's Large CAFO size threshold (i.e. 700 dairy cows) to develop and implement a nutrient management plan. Facilities under the size threshold must have a water quality plan. These plans are submitted along with the notice of intent or permit application. Additional waiver permit requirements are explained in the applicable section under "Major Findings" of this report.

2.0 INSPECTION PARTICIPANTS

Kathy and Emanuel Correia, Dairy Operator
Glenn Sakamoto, US EPA
Becky Mitschele, US EPA
Cherie Blatt, Regional Water Quality Control Board 1
Rebecca Fitzgerald, Regional Water Quality Control Board 1
Deanne Meyers, University of California (Davis)
Melissa Lema, Western United Dairymen

3.0 FACILITY DESCRIPTION

Correia Dairy is an organic, pasture-based dairy that has a capacity of 380 cows. The facility currently has 330 cows with a mix of Holstein and Jersey cows and 300 other cows. Their inventory of cows is currently higher than the permitted capacity. The facility is working with RB 1 to increase their permitted capacity. The dairy has been operating since 1963. The facility is located at 38.282324 and -122.740374. The facility has a total of 270 acres but only land applies manure/process wastewater to 230 acres.

4.0 MAJOR FINDINGS

4.1 Production Area

The production area includes the animal confinement area, milking parlors, manure and process wastewater storage area, raw materials storage area, and any other waste containment areas. 40 CFR § 122.23(b)(8). Since the permittee does not have an NPDES permit, no discharge is authorized from the production area, including overflows from a 25-year, 24-hour storm event.

Pursuant to the waiver permit, RB 1 specifies the following storage and containment area requirements:

- Storage facilities within a floodplain must be protected from inundation or damage from a 100-year flood event;

- Manure ponds constructed after 1/9/12 must comply with Natural Resources Conservation Service Waste Storage Facility Code 313, including a maximum specific discharge (unit seepage rate) of 1 x 10^{-6} cm/sec.; and
- Existing manure pond liners must meet or exceed a minimum of 10% clay and not more than 10% gravel, or the liner must be constructed of artificial materials of equivalent or greater impermeability.

There is no surface water in the production area and the storage facilities are not located within a floodplain. Housing areas had concrete flooring in the barns and dirt surfaces in the outdoor areas (i.e. dry lots). The inspectors observed sloped manured areas that could drain to fields as opposed to manure ponds. These sloped areas did not have berms.

The facility has four ponds meeting the state's liner requirements and the required 2 feet of freeboard. Mr. Correia explained that manure ponds are inspected by November 1 of each year to ensure design capacity and liner integrity. Mr. Correia stated that during years of high precipitation, ponds have historically had more than adequate capacity. All ponds can drain via a pipe to pond 4. Two additional ponds (5 and 6) only hold freshwater and not subject to regulation. See table below:

Manure Pond Description	**Capacity (ft^3)**
Pond 1 – small pond by calf area	70,470
Pond 2 – big pond for solids	323,745
Pond 3 – small pond east of housing/feeding barn	174,000
Pond 4 – east of housing/feeding barn	240,250
Total	808,465

All buildings had gutters for stormwater diversion. To minimize infiltration of manure-laden water into underlying soils, rainwater is diverted from manured areas, and manure is removed or scrapped from soil surfaces prior to rainy season. Gutters, berms, and trenches divert rainwater away from manured areas. The inspectors did not observe any evidence of production area runoff. See photos 1 to 27.

4.2 Land Application Areas

Mr. Correia installed fencing around creek areas and maintains cattle crossing to reduce sedimentation. The facility also has a Nutrient Management Plan (NMP) approved by the Natural Resources Conservation Service (NRCS), which was developed with Western United Environmental Services. The NMP was implemented in 2010-2011 (and goes until 2014-2015). Manure and process water is applied to prevent runoff or infiltration of nutrients based on previous experience, in conjunction with the facility's NMP. Specifically, nutrient budget calculations are done by reviewing the NMP, previous experience, and adjusting crops. Nutrient application is completed by November 1 each year.

4.3 Records/Reports

The conditional waiver permit contains monitoring, sampling, and record-keeping (i.e. Monitoring and Reporting Program).

The waiver permit requires facilities that meet EPA's Large CAFO size threshold (i.e. 700 dairy cows) to have and implement a nutrient management plan. Facilities under the size threshold must have a water quality plan. Dairies with less than 700 mature dairy cows are encouraged prepare and implement an NMP.

All facilities need to submit an annual report and include the results of the required sampling for stormwater runoff and/or surface waters as well as agricultural wells. The facility may conduct this monitoring or participate in a group watershed monitoring program. Sampling takes place during or directly following major storm events of one inch or more per 24 hours, during the rainy season, beginning in the winter of 2012. The permittees must monitor surface waters for electrical conductivity, total ammonia nitrogen, pH, and temperature. Agricultural wells are sampled for nitrate and fecal coliform bacteria.

For facilities that transfer manure or process wastewater, a manifest is required.

Correia Dairy had all required monitoring and record keeping. Their results were lower than the state's limits for nitrate and bacteria. The facility land applies all manure and process wastewater and does not transfer any manure off-site.

4.4 Best Management Practices and Receiving Water(s)

An unnamed creek, a tributary to Stemple Creek, intersects the facility's fields east of the production area. Stemple Creek is listed as impaired pursuant to Section 303(d) of the Clean Water Act. The state established a total maximum daily load in 1997 to ensure attainment of water quality objectives. The contaminants of concern causing impairment are nutrient and sediment from nonpoint sources. The TMDL establishes numeric targets for dissolved oxygen, temperature, pH, total ammonia, and sediment.

Pasture areas are not subject to regulation, except with respect to the land application of manure and process wastewater. The facility maintains vegetation in all fields, since all fields are used for grazing/pasture, as well as fencing to prevent cows from entering the creek. Cattle can cross the creek in three places. See photos 1 to 27.

5.0 RECOMMENDATIONS

The facility should add best management practices to keep manure and sediment out of the Creek prior to the rainy season.

The facility should minimize the growth of vegetation on top of the waste containment structure to ensure structural integrity. Embankments of any waste containment structure also should be dry and have sufficient access for equipment, such as pumps and agitators.

EPA recommends that RB 1 update the permitted maximum numbers (milking + dry and other cow) in order to be in compliance with waiver requirements.

EPA also supports the RB 1 recommendations to drain corrals and loafing areas containing bare soil to the manure ponds (as opposed to fields that could lead to runoff to the creek). The state also offers that these areas could also be scraped, fully vegetated, and free of cow traffic during the rainy season.

APPENDIX A. Staff Field Notes

INSPECTION FIELD NOTES (North Coast area CAFOs)
EPA Region 9 Compliance Evaluation Inspection (CEI)
Official Use Only (Inspector's field notes used to document observations)

FACILITY INFORMATION

Inspection Date: _4/16/2014_____

EPA Inspector: _Glenn Sakamoto_____
Accompanying State Inspector: _Cherie Blatt_____
Others: _Becky Mitschele (EPA); Melissa Lema (Western United Dairymen); Rebecca Fitzgerald (RB 1), Deanne Meyer (UC – Davis)_____

Facility Name/Address:
_Correia Dairy_____
_1537 Pepper Road_____
_Petaluma, CA 94952_____

Owner/Operator Name/Address: Phone #: ( ) _334__ - _3497_____
_ Kathy and Emanuel Correia, Dairy Operator _____
_Address: same as facility_____

NPDES ID No.: _Permitted under conditional waiver of WDR (state permit)_____

GPS Coordinates (Lat./Long.): _38.282324/-122.740374_____

Refer to Attached **EPA APPENDIX J (NPDES COMPLIANCE INSPECTION REPORT FORM 3560-3 for violation codes pertaining to this inspection)**

ANNUAL REPORT REVIEW

ANNUAL REPORT

- **Monitoring Year: 2013 (November 1 through October 31 for proceeding 12 month period)**
- **Submittal Date: Due November 30 each year**

REPORTED ANIMAL POPULATION

- **Milk Cows: 370 cows vs Actual # observed during inspection: 330 (milking + dry); 300 other**
- **Calves: vs Actual # observed during inspection:**
- **Dry Cows: vs Actual # observed during inspection:**
- **Heifers: vs Actual # observed during inspection:**
- **Other (explain): _____**

Breed: Holsteins and one jersey cow. Facility can handle up to 450 cows, even though permitted capacity is 370. The facility had more cows than what the Regional Board had approved and is working on updating the permit capacity of the facility.

MANURE INFORMATION
Amount of manure spread on cropland at the facility: total of 270 acres but only land applies manure/process wastewater to 230 acres.

- **Amount of manure hauled off site: none**
- **If hauled off site (e.g. composting operation), name and location of operation: NA**

INSPECTION OBSERVATIONS AND SUMMARY

Corrals and loafing areas containing bare soil and manure should drain to the manure ponds and not toward the creek. Manured areas should be properly sloped to drain to the manure ponds or should be scraped, fully vegetated, and free of cow traffic during the rainy season to avoid a discharge of soil or nutrients to tributaries of Stemple Creek.

Weed growth on the manure ponds was high and hindered inspection. Weeds growing on manure pond berms needs to be trimmed regularly to aid the dairy operator in checking the ponds for leaks.

The number of "other cattle" in the Water Quality Plan and Annual Report are greater than the number of maximum "other cattle" declared in the dairy's Notice of Intent. This was discussed during the inspection. Regional Water Board staff understands that some cows on leased property were not documented when the Notice of Intent was submitted. The Board is working on the possibility of updating the permitted "other cattle" numbers and may require further documentation of the corrected number at a later date. The number of milking cows remains consistent throughout the Notice of Intent, the Water Quality Plan, and the 2013 Annual Report.

APPENDIX B. Photographs – *April 16, 2014 taken by Cherie Blatt, Regional Water Quality Control Board*

1. Correia Dairy signs

2. Scraped Barn Lanes with concrete floor and curbs

3. Scraped Barn Lanes

4. Manure Pit

5. Manure Ponds 3 and 4

6. Solids Manure Pond (2)

7. Pond

8.Berm separating Ponds

9. Berm Separating Ponds

10.Unnamed Creek East of Production Area (looking downstream)

11. Unnamed Creek Southeast of Production Area (looking upstream)

12. Agricultural Well located in pasture south of production area

13. Feed storage

14.Animal Feeding/Housing Barn

15. Animal Feeding/Housing Barn

16.Drainage Culvert Inlet in Corral located West of Animal Feeding/Housing Barn

17. Drainage Culvert Outlet in Corral

18. Drainage Culvert Inlet in Corral

19. Same Culvert in Corral

20.Dirt lane west of Animal Feeding/Housing Barn

21. Animal Feeding/Housing Barn and Corral Overview

22.Corral in Northwest Quadrant of Production Area

23. Water Storage Tanks

24.Calf Manure Pond in Northwest Quadrant of Production Area

25. Calf Corral

26. Grassy area west of Calf Hutches

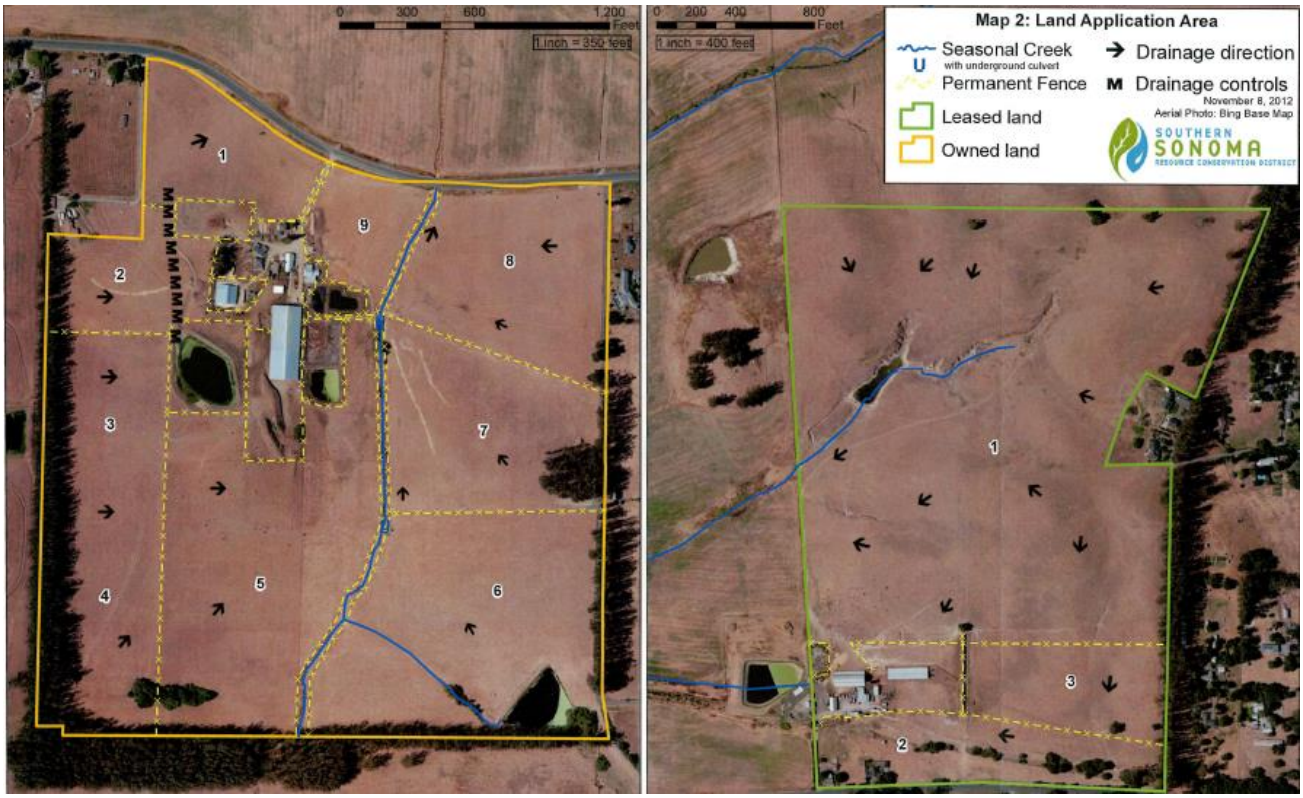
27. Calf Hutches

Appendix C. Facility Location and Maps

Map 1 and 2. Satellite photo from Google Earth showing production area and unnamed creek, a tributary to Stemple Creek.

Map 3. Topographic map denoting facility location ("C") and distance to Stemple Creek

Map 4. Map of production area showing confinement areas, manure ponds, and direction of water flow.



Map 5. Land application areas outlined with direction of water flow.